Chapter I.—GENERAL EXPLANATIONS

This volume presents the statistics of the fourth Biennial Census of Manufactures, which covered industrial operations during the calendar year 1927.

1. Legal provision for biennial census.—Section 32 of the act providing for the Fourteenth Decennial Census authorizes and directs the collection and publication, for the years 1921, 1923, 1925, and 1927, and for every tenth year after each of those years, of statistics of the products of manufacturing industries. (The decennial censuses will cover the years 1929, 1939, etc. Detailed censuses of manufacturing industries were taken decennially prior to 1899 and quinquennially from 1899 to 1919.)

2. Area and period covered.—The canvass covered manufacturing operations in the 48 States and the District of Columbia during the calendar year 1927 or the business year which corresponded most nearly to that calendar year. The returns cover a year's operations except in the cases of establishments which began or discontinued manufacturing within the year. For such establishments reports were obtained, if possible, for the portions of the year during which they were in operation.

3. Scope of the census.—The census statistics are compiled primarily for the purpose of showing (1) the production of each important class or kind of manufactured commodities, and the increase or decrease therein; (2) the absolute and relative magnitude of the various manufacturing industries [1] covered, and their growth or decline; and (3) the industrial importance of individual States and cities and their changes in rank. In addition, statistics are presented which throw light on certain matters of economic and sociological importance, such as size of establishments, monthly employment of wage earners, and power equipment.

The statistical items in regard to which data were collected at the biennial census for 1927 were as follows: Numbers of proprietors and firm members, salaried officers and employees, and wage earners; amounts paid in salaries, in wages, and for contract work; cost of materials, fuel, electric current, mill supplies, and containers for products; value of products; number and horsepower of prime movers; and quantity of coal consumed. This information was obtained from all manufacturing establishments coming within the scope of the census. In addition, as explained in Chapter III under the head "Detailed statistics of products, materials, and equipment" (p. 18), data in regard to the quantities and the values of individual classes of products, and in some cases in regard to materials and equipment, were collected from establishments in the more important manufacturing industries.

Because of the necessity for economy, both in time and in expense, certain items of information obtained at the quinquennial censuses have been omitted at the biennial censuses, namely, those relating to capital, sex and age distribution of employees, and expenditures for rent and taxes. Data in regard to amount of coal consumed were collected and tabulated at the censuses for 1923 and 1927, but not at those for 1921 and 1925.

[1] The term "industry" is used in the census reports to designate a group of establishments comprising all those engaged *primarily* in the manufacture of a specified class of products or the performance of a specified kind of work. (See "Classification of Industries," p. 17.)

The table entitled "Size of establishments by value of products," which has appeared in the reports for prior years, and that entitled "Size of establishments by average number of wage earners," which was given in the reports for 1923 and prior years, have not been prepared for the 1927 report because the great amount of preparatory work required for the Fifteenth Decennial Census made it necessary to curtail to some extent the regular census tabulations. It is the intention, however, to include these tables in future reports of the censuses of manufactures.

4. Revision of schedules.—In connection with the revision of the schedules to be used at this census, conferences were held with representatives of important manufacturers' associations and of Government bureaus, and with various manufacturing experts throughout the country; and correspondence was carried on with manufacturers' associations and individual manufacturers. In this manner much valuable advice in connection with the preparation of the schedules was obtained, and at the same time the widest publicity was given to the census.

In all, 152 special forms of schedules, covering 226 industries, were used at the census for 1927, as against only 87, covering only 119 industries, at the census for 1925. (See "Detailed statistics of products, materials, and equipment, p. 18.)

5. The canvass.—The collection of the data was begun in January, 1928, promptly after the close of the year covered by the inquiry, and by the end of June returns had been received from approximately 95 per cent of the establishments. So far as possible, the canvass was made by mail, with the result that approximately 65 per cent of the reports were collected by this method before the field agents entered on duty.

The field work was expedited and its cost reduced as a result of the cooperation of a large number of manufacturers' organizations, chambers of commerce, boards of trade, and similar organizations, and of trade publications. In many industrially important cities the chambers of commerce took complete charge of the canvass. The State geologists in 18 States cooperated in regard to industries coming within the field of their activities.

The usual cooperative arrangements were made with the Bureau of Mines, of the Department of Commerce; with the Forest Service, of the Department of Agriculture; and with the Department of Labor and Industries of Massachusetts.

6. Publication of the statistics.—Preliminary summary reports, subject to correction, each relating to a particular industry or group of industries, were issued in mimeographed form. In all, 275 such summaries, covering all the more important industries embraced in the census classification (see "Classification of industries," p. 17), were given out during the period of 12 months beginning May 28, 1928, and ending May 27, 1929. On February 28, 1929, a preliminary summary was issued giving a combined total for all manufacturing industries and totals for industries by groups, followed on March 30, 1929, by one giving totals for States. Statistics on prime movers, motors, and generators in manufacturing establishments were issued on May 16, 1929.

The next publication of the statistics was made through the medium of printed reports, in pamphlet form, 76 in number. Of these reports, 72 presented complete and detailed statistics for particular industries or small groups of related industries, and 4 contained statistics of a general character relating to all industries. The contents of these reports, together with some additional matter, have been assembled in this volume.

7. Statistics for earlier census years.—In this report the presentation of comparative statistics for earlier census years, except those given in the combined summary in Chapter II, has been restricted, as a general rule, to the years 1925, 1923, 1921, and 1919.

In comparing the statistics for 1923, 1925, and 1927 with those for census years preceding 1923, it should be remembered that 1919 and 1921 were not normal years, the former having been characterized by high prices and unusual industrial activity and the latter by low prices and industrial depression, and that prices of manufactured products have fluctuated considerably since 1921. Inasmuch as commodity prices are intimately related to salary, wage, and material costs, these considerations should be kept in mind in comparing the figures for salaries, wages, cost of materials, and other monetary items for different census years. (See "Production as measured by physical volume," p. 13.)

8. Adjustments in figures for earlier years.—It is sometimes necessary, for various reasons but chiefly because of changes in census classifications, to make adjustments in the figures for earlier census years.

When such adjustments are of considerable magnitude, they are explained in headnotes or footnotes; and when they are insignificant and do not materially affect the comparability of the statistics, the change is indicated by the footnote "Revised."

In preparing the table on page 16 it was impossible to obtain exact comparability by adjusting the earlier figures, and accordingly certain adjustments have been made for this purpose in the 1927 figures as they appear in that table. Both the adjusted and the unadjusted figures are given, the former in italics and the latter in roman type. The conditions which render these adjustments necessary are as follows:

(1) Statistics for the "Coffee and spice, roasting and grinding" industry were compiled at all censuses except that for 1925.

(2) The manufacture of paper and wood pulp was treated as a single industry at censuses prior to that for 1927 and as two industries at the census for 1927. Thus the pulp made and consumed in the same establishments was considered as an intermediate product at the earlier censuses and no cost or value was assigned to it, whereas at the census for 1927 the value of such pulp, amounting to $172,791,689, was included both in the value of products of the pulp industry and in the cost of materials of the paper industry.

(3) The value of paper used in the manufacture of converted paper products by the establishments producing it, which was not separately reported at censuses prior to that for 1927 but was included both in the value of paper manufactured and in the cost of materials used in the manufacture of converted paper products, was separately reported for 1927 ($64,236,990) and was not included in the total value of products of the paper industry nor in the cost of materials of the converted-paper-products industries.

The figures for 1927 have accordingly been adjusted for the purpose of comparison with 1925 (1) by deducting all items for the "Coffee and spice, roasting and grinding" industry from the totals for all industries; (2) by deducting the number of establishments engaged in the manufacture of both paper and pulp from the total number of establishments in all industries, and deducting the value of pulp made and consumed by such establishments, $172,791,689, from both the cost of materials, fuel, and power and the value of products for all industries; and (3) by adding the value of paper used in the manufacture of converted paper products by the establishments producing it, $64,236,990, to both the cost of materials, etc., and the value of products for all industries.

The percentages of increase and decrease for the period 1925–1927 have been calculated with reference to the adjusted items (in italics) for 1927; but, since the figures for the "Coffee and spice, roasting and grinding" industry are included in the statistics for 1923 and earlier years, the percentages for the periods 1923–1927, 1921–1927, and 1919–1927 refer to the unadjusted items. (Neither the adjusted nor the unadjusted items for 1927 are precisely comparable with those

for 1923 and earlier years, but the unadjusted items are more nearly comparable than the adjusted ones and their deviation from absolute comparability is so slight that it may properly be disregarded.)

9. The factory system.—The censuses for 1904 and subsequent years have been taken in conformity with the provision of law (act approved March 6, 1902, and subsequent census laws) directing that the canvass "shall * * * be confined to manufacturing establishments conducted under what is known as the factory system, exclusive of the so-called neighborhood, household, and hand industries."

The term "manufacturing," as used by the Census Bureau, denotes the conversion of raw or partly manufactured materials into finished or partly finished products, usually through the use of machinery in plants operated on a factory basis. Operations which do not alter the character of the substances handled, such as mixing or blending coffees and teas, packing fresh foodstuffs, fruits, etc., without processing, and the activities of milk-receiving stations, are not treated, for census purposes, as manufacturing. A few industries which do not conform strictly to the definition given are, however, covered by the census. For example, publishing, although not a manufacturing industry in itself, is so intimately related to printing that statistics compiled for the latter industry and not covering publishing operations would be incomplete and unsatisfactory.

In compliance with the provision of law cited above, the following classes of establishments are excluded from the canvass:

(*a*) Establishments which were idle throughout the year or which reported products valued at less than $5,000. (See "Limitation of statistics to establishments reporting products valued at $5,000 or more," below.)

(*b*) Establishments engaged principally in the performance of work for individual customers, such as custom tailor shops, dressmaking and millinery shops, and repair shops. (This does not apply to large establishments manufacturing to fill special orders.)

(*c*) Establishments engaged in the building industries, other than those manufacturing building materials for the general trade.

(*d*) Establishments engaged in the so-called neighborhood industries and hand trades, in which little or no power machinery is used, such as automobile repairing, blacksmithing, harness making, tinsmithing, etc.

(*e*) Cotton ginneries.

(*f*) Small grain mills and sawmills engaged exclusively in custom grinding or custom sawing.

(*g*) Wholesale and retail stores which incidentally manufacture on a small scale, particularly where it was impossible to obtain separate data for the manufacturing operations.

(*h*) Educational, eleemosynary, and penal institutions engaged in manufacturing.

Most of the establishments of classes *c* and *d* also fall in class *b*, their work being done mainly to individual order.

10. Limitation of statistics to establishments reporting products valued at $5,000 or more.—At the biennial censuses, in order to reduce the cost of the work and to facilitate the preparation of the statistics, no data (except in regard to wage earners and products, for 1921) were tabulated for establishments whose output was valued at less than $5,000. At the quinquennial censuses, however, data on all subjects covered by the census were tabulated for all establishments with products valued at $500 or more. This change in the minimum value-of-products limit, which resulted in a 21.6 per cent reduction in the number of establishments in regard to which general and detailed statistics were compiled at the census for 1921, did not otherwise materially impair the comparability of the biennial and quinquennial figures, since more than 99 per cent of the total wage earners and of the total value of products were reported by the establishments having products valued at $5,000 or more.

10a. Limit of $20,000 in certain cases.—A minor part of the production of certain commodities comes from establishments which are engaged primarily in merchandising or in some other nonmanufacturing activity and which only

incidentally produce the commodities in question. Data are collected for the manufacturing operations of many such establishments, but in other cases this is impracticable because the accounts are not kept in such a manner as to enable the establishment to supply the data readily. In three lines of activity, namely, the manufacture of confectionery, the manufacture of ice cream, and the manufacture of tin and sheet-iron work by tinshops, the numbers of establishments which manufacture incidentally are large, while their combined output of manufactured commodities is negligible in comparison with the totals for the industries concerned. No data are collected, therefore, in these three cases for the incidental manufacturing except from establishments which produce the commodities in question to the value of $20,000 or more.

11. The establishment.—As a rule, the term "establishment" signifies a single plant or factory. In some cases, however, it refers to two or more plants operated under a common ownership and located in the same city, or in the same State but in different municipalities or unincorporated places having fewer than 10,000 inhabitants. On the other hand, separate reports are occasionally obtained for different industries carried on in the same plant, in which event a single plant is counted as two or more establishments.

12. Persons engaged.—Under this head three classes are distinguished: (1) Proprietors and members of firms; (2) salaried officers (presidents, vice presidents, secretaries, treasurers, managers, superintendents, etc.), clerks, and all other salaried employees; (3) wage earners, including pieceworkers. (See Chap. IV, p. 1255.)

13. Power equipment.—Data in regard to number and horsepower of prime movers have been collected at the decennial and quinquennial censuses of manufactures since and including that for 1869, and at the biennial censuses for 1923, 1925, and 1927, but no such data were called for on the schedule for 1921. At the census for 1925, for the first time, data in regard to the number and the capacity of electric generators were also collected and tabulated. The total rated capacity of "prime movers," as shown in the census reports, includes the rated capacity of electric motors driven by purchased current, but does not include that of electric motors driven by current generated in the same establishment. Thus the total includes, without duplication, the rated horsepower of all engines, motors, etc., which serve as primary power machines in the establishments reporting; and the detailed power tables for individual industries in Chapter III, the table giving detailed power-equipment statistics by geographic divisions and States (p. 1270), and that giving detailed power-equipment statistics by industry groups and industries (p. 1272) show also the number and the horsepower of electric motors driven by current generated in the same establishments.

It has been found that some manufacturers misinterpreted the inquiry in regard to electric generators and included in their reports data for motor generators. Where it was evident that this was the case the figures were corrected by correspondence, but it is probable that the inclusion of figures for motor generators was not discovered in all cases, and that consequently the statistics for electric generators include data for an indeterminate but comparatively small number of motor generators.

In making use of the horsepower statistics it should be borne in mind that they represent the total rated horsepower capacity of engines, motors, and other prime movers, and that the amount of power in actual daily use was considerably smaller.

14. Salaries and wages.—These items represent, respectively, the total compensation of salaried officers and employees and the total compensation of wage earners (including those employed on a piece-price basis). The income derived by proprietors and firm members from the manufacturing industries in which

they are engaged is not, of course, in the form of either salaries or wages and therefore is not included in the figures for these items. (See Chapter IV, p. 1255.)

15. Contract work.—The term "contract work"—which does not necessarily imply the existence of a formal contract—is applied to work done outside the establishment reporting, on materials furnished by it. It may be done either by another manufacturing establishment or by persons working at home. Payments made for such work appear under the head "Paid for contract work"; payments received are included in "Value of products." Contract work is most common in the clothing industries, and in a few others, such as the manufacture of gloves, some contract work is done. In the great majority of manufacturing industries, however, the contract work is small in amount and in many cases is merely incidental; that is, it is not a normal or a necessary part of the industry's activity. A careful analysis of the figures for contract work led to the conclusion that, as the payments for such work were, except in a few cases, very small in comparison with the cost of materials, the contract-work statistics for most industries were of little or no value. It was therefore decided to omit the contract-work inquiry from all schedules except those for a few industries in which contract work is of considerable importance in connection with regular manufacturing operations. For all industries taken as a group, the amount paid for contract work in 1925 was equal to only 1 per cent of the total amount expended for wages, whereas for the industries for which contract-work statistics are given for 1927 in the present report this proportion ranges from 2.4 per cent in the case of the "Cotton small wares" industry to 168 per cent for the "Printing and publishing, music" industry. (Many music publishers have their printing done on contract.)

16. Cost of materials, supplies, containers for products, fuel, and power.—The statistics under this head relate to materials, supplies, containers for sale with products, fuel, and power actually used during the year. The cost of fuel and power covers coal, fuel oil, other forms of fuel, and purchased electric current. For earlier biennial census years (beginning with 1921) the cost of materials, supplies, containers for sale with products, fuel, and purchased power was reported as a single item, and consequently it is thus shown in the tables giving summary statistics covering a number of years. In the general-statistics tables, however, which relate to 1927 only, separate statistics are given for (1) the combined cost of materials, supplies, and containers for sale with products, and (2) the combined cost of fuel and power.

17. Value of products.—The amounts reported under this head represent the selling value, at the factory, of all products manufactured during the year, whether sold or not. In the case of establishments performing work under contract (see "Contract work," above) the amounts received for such work are reported in lieu of value of products.

Some manufacturers sell their products at prices which include freight and other delivery charges, but these transportation charges are deducted wherever possible.

The repair shops of steam and electric railroads manufacture few if any products for sale, their work being done or their products manufactured solely or principally for the use and benefit of the railroads operating them. For these plants, therefore, the value reported usually represents the operating cost or the cost of production, as no market value can properly be assigned to the work or the products, as it is not customary for such establishments to make any allowance for profit.

Somewhat akin to the case of the railroad repair shops is that of establishments which make partly finished products, or containers and auxiliary articles, for the use of other manufacturing establishments under the same ownership. For example: A blast furnace produces pig iron, which is used in the production of

steel in plants under the same ownership. In such cases the "transfer value" assigned by the manufacturer is accepted as the value of the pig iron. This transfer value is usually based on market prices or on the cost of manufacture, but sometimes it is purely arbitrary.

17a. Primary and secondary products.—Each establishment as a whole (a single plant being counted as two or more establishments in certain cases, as explained under "The establishment," p. 7) is assigned, on the basis of its products of chief value, to some one industry. The products reported for a given industry thus, on the one hand, include minor products different from those covered by the industry designation, and, on the other hand, do not include the entire output of products normally belonging to the industry, because some of this class of commodities may be made in establishments in which they are not the products of chief value. In the case of every industry the value of the secondary products not normally belonging to it, and that of commodities normally belonging to it but made as secondary products by establishments engaged primarily in other lines of manufacture, offset one another to a greater or less extent; and in most cases the total value of products as reported does not differ greatly from the value of the total output, in all industries, of the classes of products covered by the industry designation. (See "Assignment of establishments to industries," p. 17.)

In most of the product tables in this volume a separate item, entitled "Other products (not normally belonging to the industry)," represents the production of commodities which normally are primary products of other industries. It has been necessary in some cases to distinguish between these secondary products normally belonging to other industries and minor or miscellaneous products of the industry covered by the report.

18. Value added by manufacture.—Manufacturing is a transformation of materials. The economic importance of the processes of manufacture must be judged, not by the quantity or the value of the products leaving the factories, but by the addition to the utility or to the money value of the materials. The value created by the manufacturing processes is in most cases substantially the difference between the combined cost of the materials, supplies, containers for products, fuel, and power (see p. 16) and the value of the products. In comparing manufacturing industries with one another this relation between the value of finished products and the cost of materials should be kept constantly in mind. The products of one industry may be valued at the same amount as those of another, but the one may have added several times as much value to the materials as the other, and may therefore have been of correspondingly greater economic importance.

For this reason statistics of "value added by manufacture," representing the difference between cost of materials and value of products, are presented. These statistics are especially valuable because they are almost entirely free from the duplication, which is a factor in the total value of products. (See "Duplication in cost of materials and value of products," below.) They include a small amount of duplication due to the fact, already mentioned (see "Contract work"), that certain establishments perform contract work on materials owned by other establishments either in the same or in affiliated industries. Such establishments report the amount received for contract work in lieu of value of products, and where they are classified in the same industry as the establishments which produce the finished commodities, this results in duplication in the total value of products and therefore in the total value added by manufacture. The amount of this duplication in value added by manufacture is insignificant except in a few industries, particularly the manufacture of clothing.

19. Duplication in cost of materials and value of products.—In making use of the statistics for cost of materials and value of products it must be remembered that they include a large amount of duplication due to the use of the products of certain establishments as materials by others. This duplication occurs not only between different industries but between different establishments in the same industry. For example, in the slaughtering and meat-packing industry certain packing establishments purchase fresh meat from slaughterhouses for use as their material. The total value of products reported for the industry, therefore, includes the factory value of all finished products, and in addition includes the value of products which pass through further manufacturing processes in other establishments. The same is true on a much broader scale as between different industries. To illustrate: Copper ingots made in the copper smelting and refining industry are sold to copper-rolling mills, which roll them into rods. The rods are sold to copper-wire mills, which draw them into wire. Wire made by these mills is sold to establishments in the "Electrical machinery, apparatus, and supplies" industry, which use it in the manufacture of ignition apparatus for internal-combustion engines. These establishments sell the ignition apparatus to manufacturers of automobile engines. The engines in turn are sold to automobile manufacturers, who install them in complete automobiles. The value of the automobiles, as reported by the automobile manufacturers, includes, of course, the value of the engines; similarly, the value of the engines includes the value of the ignition apparatus; and so on. Thus in the aggregate of the values of products reported by the copper smelters and refiners, the rod mills, the wire mills, the manufacturers of ignition apparatus, the engine manufacturers, and the automobile manufacturers, the value of the copper ingots is included six times, of the rods five times, of the wire four times, of the ignition apparatus three times, and of the engines twice; and corresponding duplications occur in the aggregate cost of materials. As a result of this large but indeterminable amount of duplication, the aggregate value of the products of all manufacturing establishments is much in excess of the aggregate value of manufactured products in the form in which they reach the ultimate consumer.

A small amount of duplication also results from the inclusion of receipts from contract work in the value of products. The amount of this duplication is, however, insignificant except in a few industries, particularly the manufacture of clothing. (See "Contract work," p. 8 and "Value added by manufacture," p. 9.)

20. Quantity of products and number of wage earners as standards of measurement.—The best standard by which to measure growth or decline in manufacturing industry is found in the quantities (or numbers) of individual classes of products, where these are given for different census years in such form as to be truly comparable. Another fairly reliable standard of measurement is afforded by the average number of wage earners; but it must be remembered that, on the one hand, in some industries mechanical processes are displacing hand labor to such an extent as to make possible a marked increase in production with no increase in the number of wage earners, while, on the other hand, the average length of the working day has been considerably reduced within recent years.

21. Cost of manufacture and profits.—The census data do not show the entire cost of manufacture and consequently can not be used for the calculation of profits. At both the quinquennial and the biennial censuses no account has been taken of depreciation or of interest, insurance, advertising, and other sundry expenses, and at the biennial censuses no data have been collected for rent and taxes. The sum of the reported expenses—salary and wage payments, cost of materials, and cost of fuel and power (and for decennial and quinquennial census years, rent and taxes)—must not, therefore, be taken as representing the

total cost of production, and thus can not be used in comparison with the value of products to determine profit or loss.

22. Relation of wages to cost of materials and value of products.—In making comparisons between the wages paid in manufacturing industries and the cost of materials and value of products of these industries, it should be borne in mind that the materials and products items contain large but indeterminable amounts of duplication (see "Duplication in cost of materials and value of products," p. 10), whereas the wage figures are free from duplication. Moreover, the cost of materials, excluding the duplication therein, is made up in considerable part of wages paid to wage earners in nonmanufacturing industries, such as agriculture, mining, fisheries, and transportation. For example: The iron ore used as a material in blast furnaces comes from iron mines and is transported to the furnaces by rail or water. The cost of the ore at the mines consists in part of the miners' wages, and the cost of the ore delivered at the furnace includes also the wages paid to the employees of the navigation or railroad company which transported it. The pig iron produced by the blast furnaces is used as a material by steel mills. Thus the cost of this material is made up in part of the miners' wages, in part of the wages paid to the transportation employees, in part of the wages of the blast-furnace employees, and in part of other items. The wages paid the blast-furnace employees are included in the total wages shown by the manufactures reports, but the miners' wages and the wages of the transportation employees are not included. Moreover, the cost of the pig iron used as a material by the steel mills includes the cost of the iron ore, fuel, and supplies used by the blast furnaces. If the steel mill and the blast furnace were treated as a single establishment, this duplication would be eliminated and the cost of materials would be that of the iron ore, etc., used by the blast furnace, and the corresponding duplication in value of products would also disappear. If the mine, the transportation company, the blast furnace, and the steel mill were operated under a single ownership and treated as a single establishment, the cost of materials would be reduced to the value of the ore in the ground and the cost of fuel and supplies; the value of products would be a net amount representing the output of the steel mill alone instead of being made up of the value of the steel-mill products plus the value of the blast-furnace products; and the wage item would cover all wages instead of being limited to the wages paid in the blast furnace and the steel mill.

Thus, if the aggregate amount of wages paid both in manufacturing industries and in those industries which supply the raw materials used by manufacturers were compared with the net cost of materials or the net value of manufactured products in the form in which they reach the ultimate consumer, the ratio of the first amount to the second or the third would be much larger than that of the wages paid in manufacturing industries alone to the gross cost of materials or the gross value of manufactured products.

23. State and city statistics.—The Bureau of the Census is prohibited by law from publishing any statistics which might disclose data for individual establishments. For this reason it is necessary in the compilation of the State statistics for a particular industry to include in "Other States" certain States which are more important than some of those for which separate figures are given. For example: The "Other States" items shown in Table 5 on page 1105, for the "Pumps and pumping equipment" industry include data for several States which reported values of products larger than that for Minnesota, $1,398,304. Similarly, the "Other industries" items in General Tables III and IV (beginning on pp. 1330 and 1416, respectively) cover certain industries which are more important than some of those for which separate figures are given.

In general, separate statistics are given for each State or for each industry, as the case may be, which is represented by three or more establishments. In some cases, however, one or two establishments produce a very large proportion of the combined output of three or more establishments in a given industry in a particular State or city, and in such cases separate figures can not be given for the State in the industry table nor for the industry in the State or city table. To illustrate: Suppose that the combined production of the two manufacturers amounted to 90 per cent of the total for a group of five. In this case either of the two manufacturers in question, knowing that he had only one important competitor in his city or in his State could subtract the value of his products from the combined value for the group of five and thus obtain an amount which would not greatly exceed the value of the products of his principal competitor. It is the general practice of the bureau in cases like this to cover the figures for an individual industry into the "Other industries" items if one establishment produced 75 per cent or more of the total or if two establishments together produced 90 per cent of the total for a group of three or more.

At the biennial censuses the presentation of city statistics by industries has been restricted to those cities whose population on July 1 of the census year was estimated at 100,000 or more. Combined summary statistics covering all industries in each county and in each city having 10,000 inhabitants or more have been prepared and issued in mimeographed form, but are not included in this volume. All city statistics refer only to establishments actually situated within the boundaries of the respective cities.

24. Power laundries and dyeing and cleaning establishments.—Power laundries and dyeing and cleaning establishments are not classified as manufacturing plants, but their consumption of fuel and labor makes them important factors in the industrial system. Prior to 1925, statistics for power laundries were collected at the censuses for 1909, 1914, and 1919, but those for dyeing and cleaning establishments were collected only once, at the census for 1919. The reports on the power-laundry and dyeing and cleaning industries are presented in Chapter VII, but no statistics in regard to these industries are included with those for manufacturing industries proper.

25. Other industrial census statistics.—In addition to the census of manufactures, the bureau makes special inquiries in regard to production, sales, stocks, consumption, etc., of a large number of commodities or classes of commodities. Many of the statistics based on these special inquiries are published in the monthly Survey of Current Business, which provides, for the information of manufacturers and business men generally, a compilation of important current statistics on business and industry prepared from data gathered from governmental, commercial, and private sources. This periodical supplies information on about 1,800 basic commercial and industrial movements, and reaches nearly 6,500 subscribers monthly, in addition to hundreds of newspapers, trade associations, and representatives of the United States Consular Service abroad. A brief semimonthly summary of the Survey is also issued.

A large number of reports are issued at intervals ranging from a year to a week, each presenting statistics on some one class of commodities or on some specific industrial trend or condition. These reports cover such subjects as weekly business conditions, production and stocks of clay products, production of boots and shoes, stocks of canned vegetables, new orders booked by manufacturers of electrical goods, orders for and shipments of enameled sanitary ware, etc. They are intended to be of current rather than historical value, and consequently are issued within a very short time after the collection of the data.